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 with Security Control APO 143, San Francisco, California
 Officer 2 April 1963
 ACTIV

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①

30 November 1962

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SUBJECT: Test Report Operational Evaluation of Armed Helicopters (C)

TO: See Distribution: This document is being distributed to the National
 Defense Research and Development Agency, Office of the
 Executive Secretary, 794...
 1. (C) References in any... by...

a. DA letter, file AGAM-P(M) 381 (31 Oct 62) DCSOPS, subject:
 "Army Troop Test Program in Vietnam (U), "6 November 1962.

b. USMACV letter, subject: "Test Plan, Operational Evaluation
 of Armed Helicopters (C)," dated 29 September 1962 (NOTAL).

2. (U) Monthly Test Report Number 1, covering the period 16 October
 through 15 November 1962 is attached. Copies of this report have been
 addressed to COMUSMACV under separate cover.

3. (C) Inasmuch as the period covered by this report was the initial
 period of testing, much time and effort went into establishing liaison,
 formulating procedures, and other preparatory activities which were basic
 and essential to a definitive test program. Findings and conclusions pre-
 sented here are based on fragmentary and incomplete data; they necessarily
 are tentative, representing in many instances only points of departure for
 further testing. Confirmation or refutation of these findings and conclusions
 will be presented in subsequent reports.

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E. L. ROMNY
 Brigadier General, USA
 Chief

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U.S. ARMY CONCEPT TEAM IN VIETNAM
APO 143, San Francisco, California

3 119 210

11 30 November 1962

⑨ MONTHLY TEST REPORT NUMBER 1

Operational Employment of Armed Helicopters

14 October - 15 November 1962

1. (C) Reference: Hq MACV letter of 29 September 1962, subject: "Test Plan Operational Evaluation of Armed Helicopters (C)"

2. (C) General:

a. The purpose of this report is to provide a summary of the operational missions performed by the armed helicopter unit in the escort role, a discussion of each test objective, and a resume of test activities in general.

b. All tests and observations were made while the armed helicopter unit was engaged in operational missions. Comments of competent military observers and judgments of knowledgeable persons provided the primary data from which this report was derived. (C)

3. (S) Summary of organization and operations:

a. Background information:

(1) Only one US Army unit has engaged in armed escort of transport helicopters during the period covered by this report. This is the Utility Tactical Transportation Company (Provisional) (UTT Co.).

(2) The UTT Co. was declared operational on 14 October 1962. It was placed in direct support of III ARVN Corps with the mission of providing armed escort for US Army transport helicopters. The unit is assigned to the 45th Transportation Battalion. It receives its mission directions from the senior US advisor with the III ARVN Corps.

(3) The unit is stationed at Tan Son Nhut airfield, Saigon.

(4) Personnel strength and equipment status as of 14 October 1962:

(a) Personnel	TD Authorization	Present for Duty
Officers	17	13
Warrant Officers	16	12
Enlisted Men	83	73

(b) Equipment	TD Authorization	Assigned
UH-1A (Armed)	25	14

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NOTE: The UH-1A illustrated at Inclosures 1 and 2 is equipped with two fixed 2.75" rocket pods, each containing 8 tubes. The pods, mounted one on each skid, can be fired in pairs (one left and one right) or in a ripple. The speed of the ripple firing is controllable. In addition, one fixed caliber .30 machine gun is mounted on each skid. 5000 rounds of caliber .30 ammunition are carried internally. Flank and rear security are provided by gunners stationed in the doors armed with hand-held automatic weapons.

(5) During the first 30 days of operations, the UTT Co. flew 580 combat support hours. With an average aircraft availability rate of six per day, the ratio of availability to flying time compared favorably with all other helicopter units operating in South Vietnam. The low aircraft availability rate (six flyable versus 14 assigned) was due to the lack of spare parts. At Inclosure 3 is a resume of the major E.D.P. items (equipment down for parts) which have created this problem.

(6) The 580 hours flown comprised a total of 24 operational missions. Each mission lasted from eight to 16 hours, for an average duration of 12 hours. This time includes mission briefing, preflight preparations, flight time, and after-action maintenance and debriefings.

b. Summary of mission data:

(1) In nine missions, fire was exchanged with insurgent forces. Thirty-thousand rounds of caliber .30 ammunition and 420 rounds of 2.75" rocket ammunition were expended during these missions. An estimated 70 insurgent KIA/KIA were credited to the unit.

(2) Four escorted helicopters (UH-21s) grounded by mechanical failures in the landing zones were protected by the armed helicopters until ground troops could be brought forward to provide security for the downed aircraft.

(3) The unit took a total of six hits on four aircraft; none caused major damage. One crew chief/gunner was fatally wounded by hostile fire. One pilot wearing a flak vest was struck by a spent round which passed through the front wind screen and a portion of the instrument panel before striking him on the chest; he was not wounded.

(4) No UH-1A aircraft has been lost to enemy action; however, one was lost due to mechanical failure of the tail rotor. One notable instance of quick thinking occurred when a 2.75" rocket hit by hostile fire began to burn and threatened to destroy the aircraft and crew. The pilot, CWO Heck, proceeded immediately to a river located about two miles from the landing zone, submerged the lower portion of the helicopter and the burning rocket in the water, and put out the fire. The pilot has been recommended for an appropriate award.

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(5) The value of this unit is best measured by its contributions to the success of airmobile operations. It has won praise from the 45th Transportation Battalion (See Inclosure 4). Pilots of the escorted helicopter companies have expressed admiration for the courage and determination displayed by the UTT Co. and for its willingness to close with the enemy and place itself between transport helicopters and enemy fire.

4. Test findings and tentative conclusions:

a. General. Findings and tentative conclusions discussed below have been obtained while the armed helicopter unit was engaged in operational missions. Consequently, certain test limits were established by the mission, enemy, and terrain. No attempt has been made to judge the tactical success of the transport helicopter operations or to assess the effectiveness of the military operations in which these forces were engaged.

b. Objective Number 1: Determine the tactics and technique employed in providing armed escort for transport helicopters.

(1) Tentative findings:

(a) Organization for combat: After trial-and-error it appears that a five-helicopter platoon is the minimum organization that can provide effective escort for a force of 10 to 20 transport helicopters. This platoon is organized into a platoon headquarters, equipped with one armed UH-1A, and two sections, each equipped with two armed UH-1As. This organization establishes a chain of command from the platoon leader through the section leaders to each aircraft. It permits the platoon leader to commit one or both sections where the greatest amount of fire power is required. It allows the platoon leader to maneuver the sections for broad coverage of an area or to concentrate the platoon at the point of greatest enemy strength. The platoon leader commits his own capability to the section requiring the greatest effort.

(b) Tactics and techniques: The following discussion and sketch A (Inclosure 5) illustrate the tactics employed by the UTT Co.

1. Sketch A represents in figures 1, 2, and 3 the three major events that take place in the landing zone:

2. In each figure the flight column is composed of transport helicopters, represented by (x), and armed helicopters represented by (), with numbers to represent the aircraft within the platoon. (1) and (2) form Section A; (2) is the section leader. (3) and (4) form Section B; (4) is the section leader. (5) is the platoon leader.

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3. In a typical airmobile operation (Fig 1) the transport helicopters fly nap-of-the-earth accompanied by (1) and (3) flying on each flank at the column at the same altitude. Depending on length of the column, (2) and (4) are farther back, providing flank security but close enough to support by fire any targets which (1) and (3) may uncover. (2) and (4) fly at 100 to 200 feet so as to be in a position to observe and gain greater accuracy with their rockets. (5), the platoon leader, flies high enough to analyze the terrain and maneuver the platoon as necessary. This formation is held until arrival at the landing zone. If hostile fire is received along the flight route, suppressive fires are delivered only long enough to allow the column to pass.

4. As the force arrives in the landing area (Fig 2), (1) and (3) follow the transport helicopters to the ground, attempting to draw any fire that may be encountered. If fire is encountered, (1) or (3) immediately returns the fire, identifies the target by tracer, smoke or radio, and supports by fire while (2) or (4) launches a rocket attack. If both sections are committed to the same woodland or area, the platoon leader insures that there is proper fire distribution. When required, the platoon leader reinforces that attack.

5. If hostile fire has not been received initially, (1) and (3) pull up to 200-300 feet as the first transports lift off, each establishing a circling search pattern around the landing zone. Number (2) and (4) then join (1) and (3) respectively; the platoon leader moving to the most likely area of enemy activity. The platoon continues to search for insurgents who may threaten the transport helicopters. As the transport helicopters leave the area, the armed escorts take up positions on the flanks of the column for the flight to the release point.

(c) Certain changes to these basic tactics are being considered to fit situations which might repeat often enough to warrant adoption. One observer report indicates that elements of the armed helicopter escort force flying above the transport helicopter column tend to compromise the position and direction of movement of the force. Some observers believe this applies to all escort activity over and in front of the column and around the landing zone. New flexible automatic weapons and improved rocket systems may permit the armed helicopter escort to fly all of its elements at the altitude of the transport helicopter force.

(2) Tentative conclusions:

(a) The platoon-size organization for combat and the tactics described in this report are adequate to provide protection for a force of 10 to 20 transport helicopters.

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(b) Because of the limited number of transport helicopters employed in III ARVN Corps airmobile operations, no requirement has developed for employment of armed escort in greater than platoon strength. Tactics and techniques for company-sized armed escort will be determined as operation conditions permit.

c. Objective Number 2: Determine the effect of armed escort on insurgent forces: In this respect does the presence of armed escort reduce the amount and accuracy of fire placed on transport helicopters by insurgent forces?

(1) Tentative findings:

(a) During the 30-day reporting period the three CH-21 helicopter companies operating in III ARVN Corps area reported that nine CH-21s received a total of 17 hits. During the previous month, 15 CH-21s took 61 hits.

(b) Debriefing CH-21 pilots indicates that hostile fire on their helicopters gradually decreased during the reporting period.

(2) Discussion:

(a) Evidence indicates that the tactics employed by armed helicopters have been successful in drawing fire away from the transport helicopters.

(b) Evidence from all missions in which an exchange of fire has been made between the armed helicopter and insurgents indicates that once fire superiority is established by the armed helicopters, no more hostile fire is received.

(3) Tentative conclusion: The presence of the armed helicopters has reduced the amount and accuracy of fire placed on transport helicopters by insurgent forces by approximately 50%.

d. Objective Number 3: Determine optimum command control, communications, and coordination procedures used between the transport unit, the armed escort, the supported ground commanders and tactical aircraft.

(1) Findings Sufficient data have not been collected on which to base a proposed optimum solution for this test objective. Limited analysis indicates the following:

(a) Command Control: The armed helicopter escort commander supports the transport helicopter commander, and reports directly to him.

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(b) Communications Procedures: The armed helicopter unit and transport helicopter unit maintain a station in the ground commander's FM command net within which the helicopter units communicate.

(c) Coordination Procedures:

1. Tentative procedures have been established between the tactical aircraft and the armed helicopters. Formal operating procedures are still being staffed by JOC, 2d Air Division.

2. Standing Operating Procedures for airborne operations are presently being prepared by the 45th Transportation Battalion.

(2) Conclusions: None at this time.

e. Objective Number 4: Determine optimum in-flight formations and deployment of armed helicopters in relation to the transport helicopter formation.

(1) Tentative findings: The formations and deployment discussed under Test Objective 1 are applicable here. Other formations will be developed to adjust to varying terrain conditions. The capabilities of the new XM-6 weapons systems may permit changes in tactical formations. In all situations, escort formations must conform to the requirements of the transport helicopter force.

(2) Tentative conclusion: Present formations and deployment are adequate for existing missions. New formations will be developed when the influence of terrain and the full capabilities of the new UH-1B helicopters and flexible gun systems have been determined.

f. Objective Number 5: Determine communications procedures to be employed in-flight, while landing, off-loading, and during withdrawal of transport helicopters.

(1) Tentative findings:

(a) Initially, the unit experienced difficulty because of the inability to exchange enough information by radio. As tactics and formations became standardized and communications discipline was enforced, radio traffic was drastically reduced and this situation improved. Each aircraft knows its position in the formation and its responsibilities, and unless an unusual situation occurs, few transmissions are required.

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Receipt of hostile fire by the transport or armed helicopters is announced over the air in a "blanket-call" by the first person detecting it. To date, the constant change of airborne participants and the lack of a standing operating procedure has resulted in poor fire-reporting techniques.

(b) The SOP being prepared by the 45th Transportation Battalion will provide specific fire-reporting techniques. These procedures will be evaluated before they become standardized.

(2) Conclusions: None at this time.

g. Objective Number 6: Determine the effectiveness of close-in aerial suppressive fire support delivered in protection of helicopters and ground forces during the off-loading from transport helicopters.

(1) Tentative findings: In 15 of 24 missions no fire was delivered in the landing zone. In some instances, ARVN observers in the armed helicopters identified running and hiding personnel as insurgents; however since no hostile acts were committed they were not fired upon. During nine missions, heavy fire was encountered from insurgents in the landing zone. Debriefing of CH-21 pilots indicates that insurgents fire ceased after armed helicopters returned the fire. In addition, debriefing reports indicate that on four occasions armed helicopters broke up attacks by insurgents as they attempted to move in on helicopters downed by mechanical failures. In one instance, an estimated 25-35 KIA/KIA were credited to the armed helicopter unit.

(2) Tentative conclusion: Close-in fires have been effective, and on four occasions have prevented transport helicopters from falling into insurgent hands.

h. Objective Number 7: Determine methods employed by armed helicopters to locate insurgent forces.

(1) Tentative findings: In most cases it is not difficult to observe moving people from an aerial vantage point. In many instances it is possible to observe camouflaged positions. Weapons not equipped with flash hiders are very noticeable when fired; this is particularly true at dusk or on a cloudy day. In many operations personnel are seen running from the area of operation, but unless they commit a hostile act it is not possible to identify them as insurgents. An ARVN observer is carried on each armed helicopter; his knowledge of the area and tactical situation has been helpful in distinguishing insurgents from the local inhabitants. Insurgents cannot be seen under heavy tropical foliage. Analysis of aerial photographs has proved useful in identifying areas in landing zones from which hostile fire may occur.

(2) Tentative conclusions: Unless the insurgents identify themselves by firing on friendly forces there currently is no satisfactory way of locating hostile forces. Further testing of aerial photography is required.

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i. Objective Number 8: Determine optimum organization to include whether armed helicopters should be included in the TOE of transport companies or should the armed helicopter unit be in support of the transport company?

(1) Findings:

(a) Current operational requirements do not permit testing at this time of armed UH-1A and B helicopters as TOE elements of the CH-21 transport helicopter companies. When armament is made available for CH-21 helicopters, this part of the objective will be evaluated.

(b) Based on organizational deficiencies noted during the first month of operation, a personnel augmentation has been requested by the VTT Co. Approval of this augmentation is pending.

(2) Conclusion: Subsequent to the approval and implementation of the personnel augmentation, further evaluation is required to determine an optimum organization.

j. Objective Number 9: Determine logistical problems:

(1) Tentative findings:

(a) An excessive delay in the delivery of EDP items (equipment down for parts) has contributed to an aircraft availability rate of approximately 60%. Review of the unit's records indicates that of 46 items, 10 have been EDP for more than 30 days, 20 for more than 15 days and nine for more than seven days.

(b) Class III-A dispensing is inadequate at most loading areas. Time spent refueling helicopters with hand pumps is excessive, and in some instances delays in CH-21 refueling have disrupted the tactical scheme of maneuver.

(2) Conclusions:

(a) The present system for handling EDP items is not responsive to the needs of the USGV in counter-insurgency operations.

(b) Portable engine-driven fuel pumps, with segregators, are needed to support airmobile operations where on-site facilities are limited.

k. Objective Number 10: To determine a Day of Supply for Ammunition by type.

(1) Findings: 30,000 rounds of caliber .30 ammunition and

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420 rounds of 2.75" rocket ammunition were expended in a 30-day period. This indicates a daily requirement of 3,000 rounds of caliber .30 and 14 rounds of 2.75" rocket ammunition for eight UH-1As.

(2) Tentative conclusion: A Day of Supply is 370 rounds of caliber .30 and one round of 2.75" rocket ammunition per aircraft.

5. Summary:

a. Although the first month testing proves conclusively the value of armed helicopters in an escort role, more factual information must be gained to substantiate or modify the tentative conclusions.

b. New aircraft and weapons systems, plus the changing operational requirements--will require continuing study to determine their effects on present findings.

c. It is estimated from the data collected and from the tentative conclusions reached that this test is approximately 20% complete.

INCLOSURE NUMBERS 1 and 2 OMITTED

(PHOTOGRAPHS) ATTACHED TO COPY NUMBER

1 ONLY.

EDP STATUS AS OF 260800 NOV 62

<u>NOMENCLATURE</u>	<u>F/S/N</u>	<u>QTY</u>	<u>DATE OF EDP</u>
Box Assy Gear 90°	1560-440-1872	1	3 Oct 62
Box Assy Gear 90°	1560-830-5702		
Box Assy Gear 90°	1560-440-1872	1	27 Oct 62
Box Assy Gear 90°	1560-440-1872	1	30 Oct 62
Box Assy Gear 90°	1560-440-1872	1	10 Nov 62
Box Assy Gear 90°	1560-830-5702	1	10 Nov 62
Box Assy Gear 90°	1560-440-1872	1	17 Nov 62
Wire Rope Assy	1560-440-1872	1	17 Nov 62
Lever Assy	1560-625-0034	2	1 Nov 62
Hub Assy T/R	1560-765-7846	2	10 Oct 62
Hub Assy T/R	1560-765-8598	1	3 Oct 62
Scratchplate & Support Assy	1560-765-8598	1	3 Oct 62
Scratchplate & Support Assy	1560-775-3807	1	3 Oct 62
Elevator Assy	1560-780-2658	1	6 Oct 62
Fan Assy Oil Cooling	1560-780-2658	1	6 Oct 62
Fan Assy Oil Cooling	1560-796-9700	1	2 Nov 62
Fan Assy Oil Cooling	1560-796-9700	1	18 Oct 62
Fan Assy Oil Cooling	1560-796-9700	1	27 Oct 62
Fan Assy Oil Cooling	1560-796-9700	1	10 Nov 62
Fan Assy Oil Cooling	1560-796-9700	1	14 Nov 62
Fan Assy Oil Cooling	1560-796-9700	1	14 Nov 62
Blade Assy T/R	1560-796-9700	1	23 Oct 62
Blade Assy T/R	1610-448-0142	2	11 Oct 62
Blade Assy T/R	1610-448-0142	2	25 Oct 62
Starter Generator	1560-690-7601		
Starter Generator	2925-659-3856	1	6 Nov 62
Starter Generator	2925-659-3856	1	6 Nov 62
Belt	2925-659-3856	1	16 Nov 62
Belt	5306-180-0400	1	7 Nov 62
Bolt	5306-616-1270	4	30 Oct 62
Nut	5306-705-4720	2	10 Nov 62
Grommet	5310-176-8121	2	10 Nov 62
Packing	5325-300-9802	3	18 Oct 62
Spacer	5330-256-6035	1	15 Nov 62
Relay Bus Control	5340-690-7940	1	6 Nov 62
Tachometer Generator	5945-553-9965	1	24 Oct 62
Transmitter Oil Press	6680-553-8829	1	29 Oct 62
Indicator Ext Temp	6685-556-8341	1	3 Oct 62
	6685-566-8614	1	7 Nov 62

HEADQUARTERS
45TH TRANSPORTATION BATTALION (TRANS ACFT)
APO 143, V.S. Forces

ASGV-J

7 November 62

SUBJECT: Unit Achievement

TO: Commanding Officer
Utility Tactical Transport Company
APO 143, Saigon, Vietnam

1. I have noted with pleasure that your unit flew in excess of 300 hours in the month of October. This accomplishment is particularly praiseworthy in view of the fact the majority of the time flown was in combat support of ARVN operations. I fully appreciate the difficulties the unit is operating under and you are to be congratulated for the manner in which each obstacle has been met and overcome. The high number of hours flown and the aircraft availability rate reflect many long hours of work and aggressive leadership at all levels.

2. The outstanding success of your operational missions reflect a high degree of professional knowledge and skill and personal bravery on the part of the officers and men. Your aggressiveness and spirit of "get the job done" is apparent in each mission the unit performs. Your accomplishments would be noteworthy if you were operating under ideal conditions, which you certainly are not. However, adverse living conditions, long hours of hard work, and poor recreational facilities have not affected the high standards of performance.

3. The presence of the armed UH-1's on combat support missions is reassuring and comforting to the aviators of the Light Helicopter Companies. It is especially reassuring to an aviator to realize his armed escort is manned by fellow army aviators who are more than willing to go "all the way" for his protection and safety.

4. I want to commend you and your outstanding organization for a job well done, you are a credit to the United States Army.

HOWARD B. RICHARDSON
Lt Col, TC
Commanding

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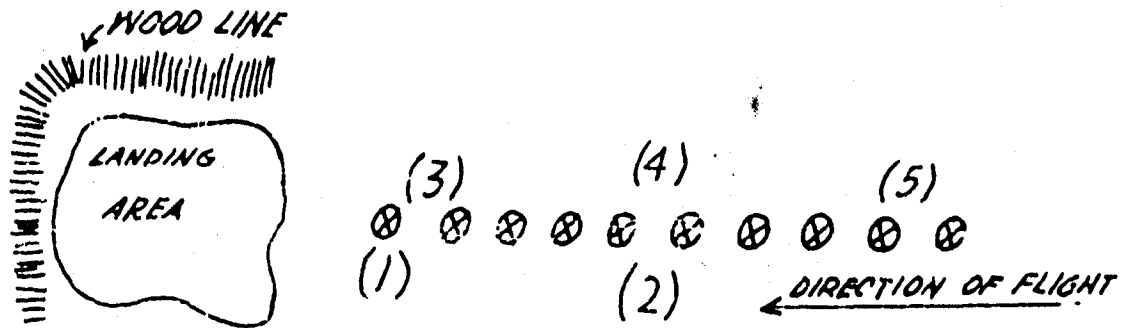


FIG 1 - APPROACH

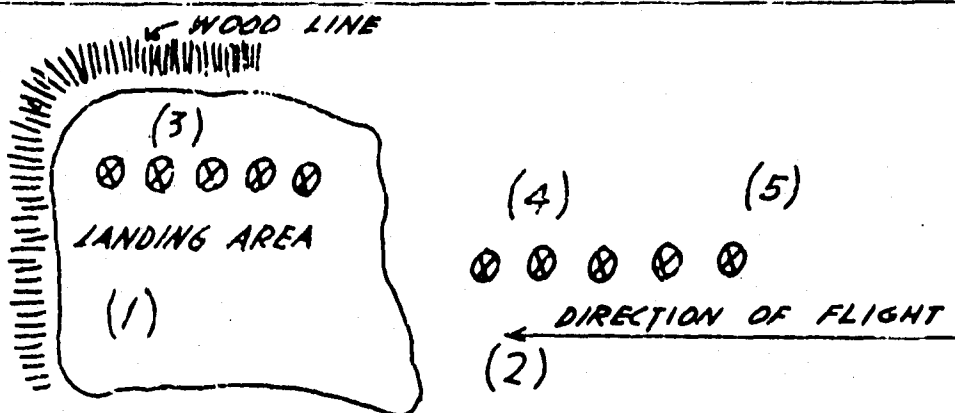


FIG 2 - INITIAL LANDING

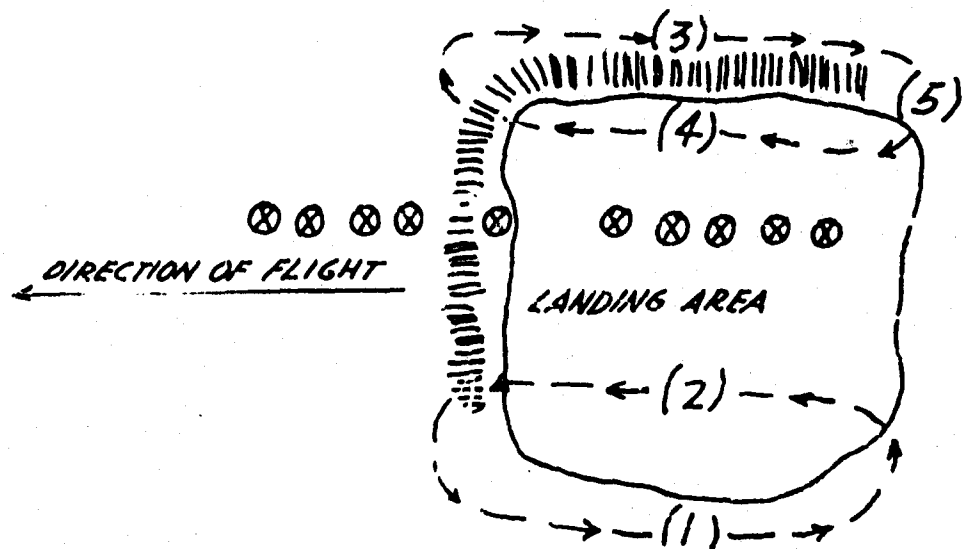


FIG 3 - DEPARTURE OF FIRST ELEMENT AND FINAL LANDING

SKETCH A

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